No. 702,436. Patented June 17, 1902.

W. E. JOHNSTON.

SAND PUMP AND BAILER.

(Application filed July 9, 1901.)

(No Model.)

Fig. 1.

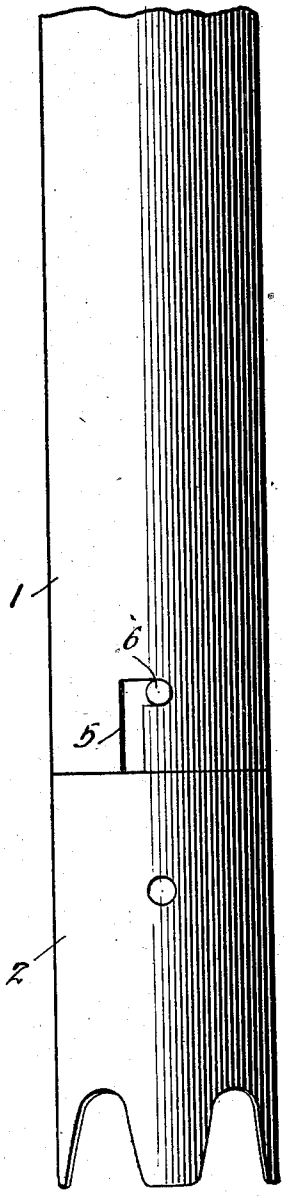


Fig. 3.

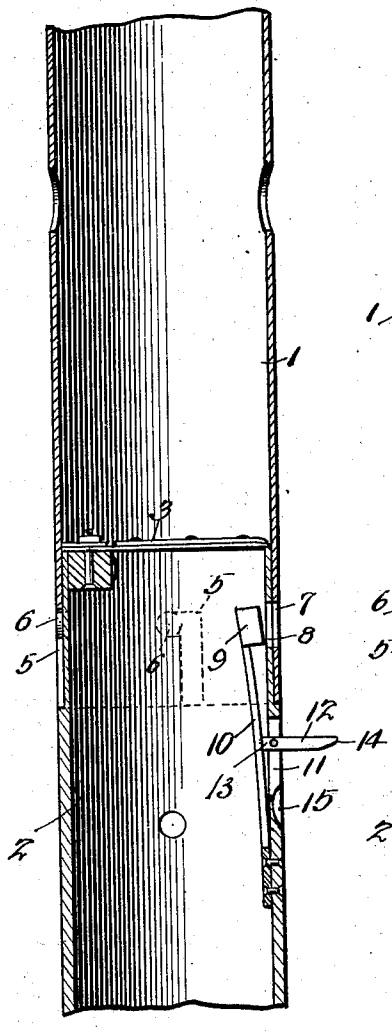
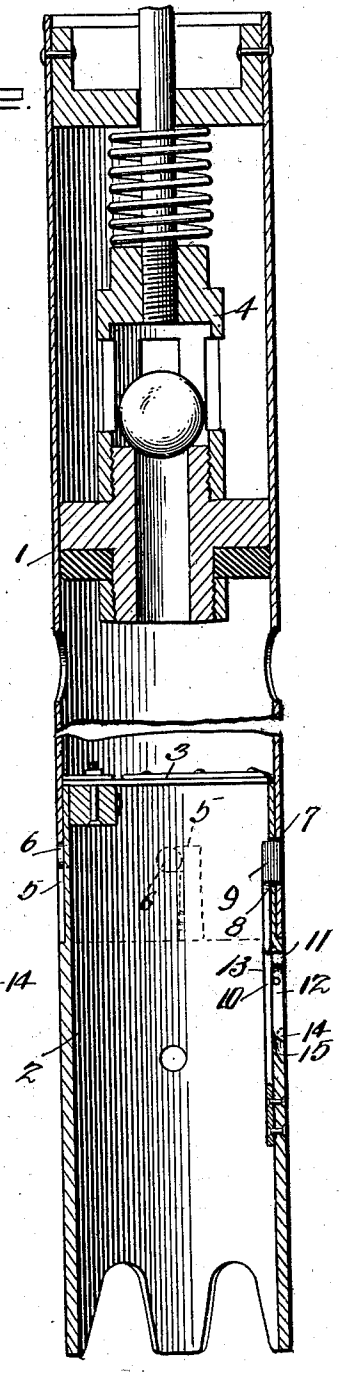


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM E. JOHNSTON, OF CONOQUENESSING, PENNSYLVANIA.

SAND PUMP AND BAILER.

SPECIFICATION forming part of Letters Patent No. 702,436, dated June 17, 1902.

Application filed July 9, 1901. Serial No. 67,673. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. JOHNSTON, a citizen of the United States, residing at Conoquenessing, in the county of Butler and State of Pennsylvania, have invented a new and useful Sand Pump and Bailer, of which the following is a specification.

This invention relates to sand pumps and bailers intended principally for use in oil-wells for removing sand, mud, and the like; and the object of the same is to provide simple and effective means for conveniently and quickly reaching the valve at the lower extremity of the cylinder by arranging said valve in connection with a separable section and also to facilitate the discharge of the contents of the cylinder without tilting the pump.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of a sand pump and bailer embodying the features of the invention. Fig. 2 is a transverse vertical section of the same, showing the piston in place and the lower removable section fully locked. Fig. 3 is a transverse vertical section of a part of the pump and bailer, showing the locking means for the lower section as open.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates the tube or cylinder of the improved pump and bailer, having a lower removable section 2 fitted in close relation to the lower extremity of said cylinder to form a smooth joint with the latter and having a valve 3, located at the upper end thereof, the cylinder also being supplied with the usual or any preferred form of piston 4. At regular intervals the lower extremity of the cylinder is formed with bayonet-slots 5, and the upper end of the section 2 is reduced and shouldered to fit into the lower extremity of the cylinder to form an exterior flush surface with the latter, the upper reduced end of the section having outstanding studs 6 to engage the bayonet-slots 5, as shown, the outer ends of the studs being flush with the outer surface of the cylinder when the latter and the section are connected. The lower extremity of the cylinder and upper extremity of the section have coinciding slots 7 and 8, respectively, which are engaged by a correspondingly-shaped head 9 on the outer side of the upper end of a spring-arm 10, secured to the inner side of the said section, the outward extent of the head 9 being such that when in the slots 7 and 8 it will have no outward projection beyond the outer surface of the cylinder. The section 2 in line with the arm 10 has a longitudinal slot 11 formed therein above the point of attachment of the said arm, and mounted in said slot is a release-lever 12, which is fulcrumed near one end, so that said lever may by turned outwardly to bring the said end inwardly to contact with the arm 10 and force the latter inwardly to force the head 9 out of the slots 7 and 8. The end 13 of the lever which contacts with the arm 10 is at a right angle to the sides of the lever to produce a straight locking bearing-face on said arm to thereby hold the latter inwardly pressed with positiveness during the separation of the section from the cylinder. When the lever 12 is turned into the slot 11, as shown by Fig. 2, the spring-arm will be free to throw its head outwardly into the slots 7 and 8, and said lever will be held against loose movement by the spring-arm bearing thereagainst. The free end 14 of the lever 12 is reduced, so as to permit the tip of the finger of the operator to be placed thereunder, and a finger-end recess 15 is formed for this purpose in the section and communicates with the lower end of the slot 11. This particular form of locking means has a minimized interior projection and no outer projection whatever, the lever 12 when closed into the slot 11 lying flush with the outer surface of the section. The use of a larger valve is permitted, and the capacity of the pump and bailer is increased.

It will be seen that the section can be readily attached or detached, and when the pump is removed from the well the section 2 can be conveniently removed without delay to relieve the pump of its contents and to reach the valve when necessary. The valve

can also be easily replaced, and said valve being at the top of the section 2 can be easily removed or applied.

Having thus described the invention, what is claimed as new is—

1. In a sand pump and bailer, the combination of a cylinder having bayonet-slots at the lower end thereof and a locking-slot, a removable section having an upper reduced end with studs to fit in said lower cylinder end and also provided with a locking-slot to coincide with that of the cylinder end, the upper portion of the section also being formed with a slot below the locking-slot, a spring-arm on the inner side of the section and extending over the lower slot and having an upper outwardly-projecting head to engage the said locking-slots, and a releasing-lever fulcrumed in the lower slot of the section to engage the spring-arm to release the head thereof from the said locking-slots, the parts all being flush with the exterior of the cylinder and section.

2. The combination of a stationary and a removable member, each of said members having slots therein adapted to register one with the other, the removable member having a slot disposed below said registering slot, a spring-arm fastened to the inner face of said removable member below the second slot and adapted to extend thereover, said arm having a head adapted to project through the registering slots in the two members and lock them together, and a lever fulcrumed in said slot and adapted to engage said arm.

3. The combination of a cylinder having an aperture near the lower end thereon, a removable section having an upper reduced end to fit in said cylinder and provided with an aperture adapted to register with the aperture in the cylinder, said section also having a slot disposed therein below said aperture, a spring-arm attached to the inner face of said section below said slot and extending thereover, said arm having a head adapted to project through the registering apertures in the cylinder and movable section and lock said parts together, and a lever fulcrumed in said slot and adapted to engage said arm.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. JOHNSTON.

Witnesses:

SAMUEL W. LOBAUGH,

JACOB FOGEL.